

ET3

Osram

VALVES

ET3 SUB-MINIATURE ELECTROMETER TRIODE

DESCRIPTION

The ET3 sub-miniature electrometer triode is a thermionic valve having a very high input resistance and low capacitance while being considerably smaller than the type ET1. The valve has a low filament current which, with the voltage rating of the filament, enables it to be run from a small dry cell.

RATINGS

Filament Voltage	...	...	...	...	...	...	1.25	volts
Filament Current	...	...	...	...	...	...	0.025	amp
Anode Voltage	...	...	...	...	...	...	9	max. volts
Mutual Conductance*	...	...	...	...	...	...	70	$\mu\text{A}/\text{volt}$
Amplification Factor*	...	...	...	...	...	...	1	
Grid Resistance†	...	...	...	...	...	...	$>10^{14}$	ohms

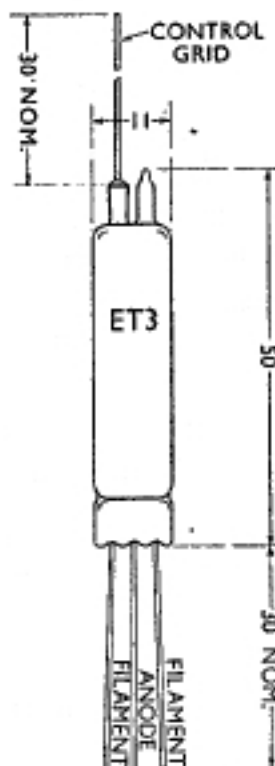
* Measured at $V_a=6$, $V_g=-2$.

† Measured at $V_a=6$, $V_g=-3.5$.

Capacitances :

Control Grid to all other electrodes	...	...	...	...	...	...	1.7	pF
Control Grid to Anode	...	...	...	...	...	...	0.2	pF

DIMENSIONS



BASE

Soldered-in type valve.

One of the filament leads is painted black and is connected internally to a screening electrode: this should be earthed and connected to the negative end of the filament supply.

OPERATING CONDITIONS

To obtain the smallest possible grid current the anode potential should not be greater than six volts positive and the grid voltage not less than two volts negative with respect to the negative end of the filament. The valve should be operated in darkness and it is advisable to enclose it in a dry container. This should be of metal to serve as an earthed electrostatic screen.

GENERAL

In order to maintain the high value of grid-filament insulation in a humid atmosphere, the glass envelope is coated with a water repellent substance which should not be allowed to become contaminated, particularly by handling with bare fingers. Should contamination occur the valve may be washed by immersion in clean carbon tetrachloride or methylated spirit and dried in a current of warm air. The coating is tough and will withstand careful rubbing with a soft cloth.

The valve is supplied in a paper envelope. When required for use, a quarter of an inch of paper should be carefully torn from each end of the envelope, exposing the tinned leads. With the valve still in the envelope, these leads should be soldered to the appropriate points in the circuit, using only a resin-cored solder. No other form of flux must be employed. When the leads have been soldered in position, the remaining portion of the envelope should be carefully cut away, taking care not to touch the glass bulb.

ELECTRONIC AND ALLIED DEVICES

(EXCLUDING VALVES)

There are a number of electronic and allied devices used in Scientific and Industrial applications, and the following are listed.

Barretters (Current Stabilisers).

A barretter consists of an iron wire filament suspended in an atmosphere of hydrogen, and is designed to maintain a substantially constant current for varying values of applied voltage.

The types listed are as follows :

161	for control of current	0.16 amp.
202	„ „ „	0.2 amp.
301	„ „ „	0.3 amp.
302	„ „ „	0.3 amp.
303	„ „ „	0.3 amp.
304	„ „ „	0.3 amp.

Voltage Stabilisers.

The types listed include single- and multi-gap neon tubes for stabilisation of voltage at various values of voltage and current.

QS 70/20	miniature for 70 volts 20 mA.
QS 70/60	octal base type for 70 volts 60 mA.
QS 95/10	miniature for 95 volts 10 mA.
QS 150/15	miniature for 150 volts 15 mA.
QS 105/45	8-pin all-glass base type for 105 volts 45 mA.
QS 150/45	8-pin all-glass base type for 150 volts 45 mA.
S 130	4-pin base type for 120 volts 75 mA.
ST 11	4-pin base type for 100 volts 8 mA.
QS 83/3	miniature high stability type.
STV 280/40	4-gap 5-pin base type.
STV 280/80	4-gap 5-pin base type.

Neon Indicator Tubes.

Type F. Miniature neon indicating tube for A.C. operation.

Type G. Miniature neon indicating tube for A.C. operation.

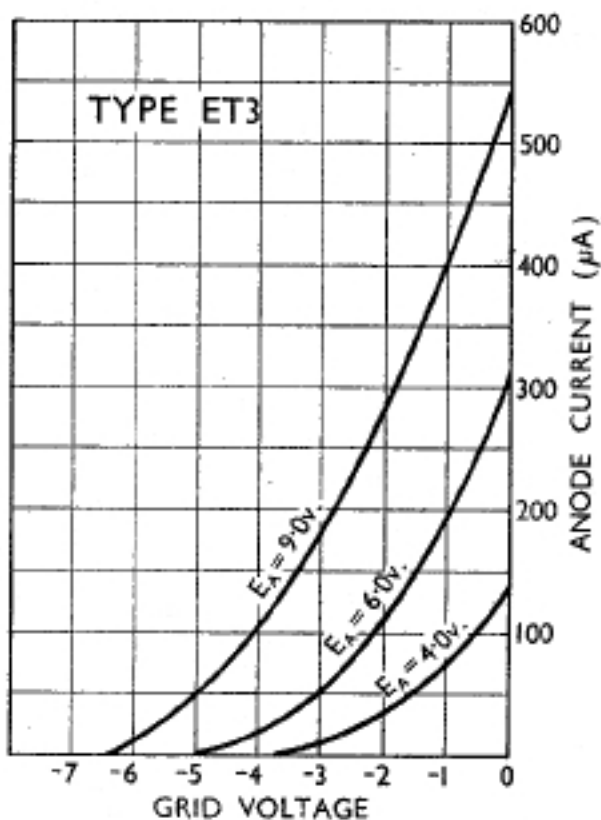
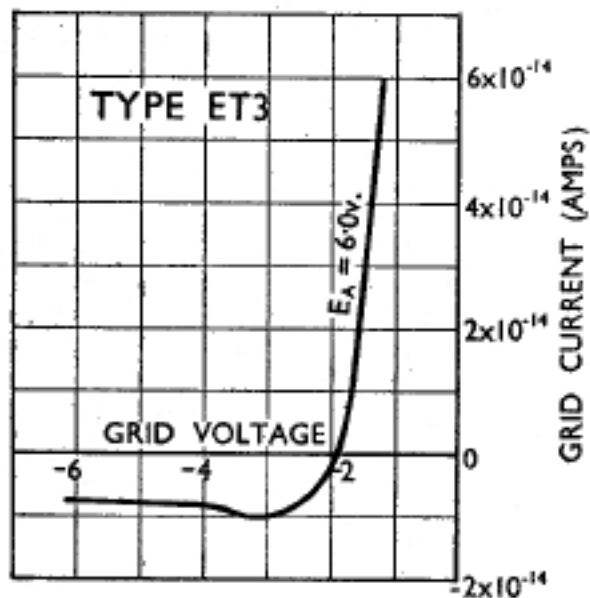
Button Tuneon, Tuning indicator for D.C./A.C. operation.

Photoelectric Cells.

Various types of photoelectric cells are available for the detection and measurement of light, and these have numerous scientific and industrial applications. The following types are listed :

CMG 8	} Caesium-silver oxide gasfilled photo cells.
CMG22	
CMG25	
CMV28	Double system caesium-silver oxide vacuum photo cell.
CMG28	Double system caesium-silver oxide gasfilled photo cell.
CWS24	Secondary emission photo cell.
CMV6	Caesium-silver oxide vacuum photo cell.
UNG7	Sodium gasfilled photo cell.
UDG7	Cadmium gasfilled photo cell.
KG7	Potassium gasfilled photo cell.
KMV6	Potassium/silver oxide vacuum photo cell.
No. 1.	} Rectifier type photo cells.
No. 2.	
Type MD	photo cell relay amplifier.
Photo electric	daylight control unit.
Photometer	Unit.

TYPE ET3



CHARACTERISTIC CURVES OF AVERAGE VALVE.

Geiger-Müller tubes.

A range of Geiger tubes is listed for the detection of alpha, beta and gamma rays.

Three types of Geiger tubes are listed, differing mainly in the thickness of the end window and therefore applicable to detect different types of radiation.

GM2 for measurement of γ rays and fast β rays.

GM4 for measurement of medium speed β rays.

EHM2 for detection of slow β particles.

Lightning Arresters.

For line protection against sudden surges of high voltage. Two types are listed :

CCA For protection of power circuits.

CCB For protection of communication circuits.